

## CLAIMS

[1] A sound detecting mechanism comprising a pair of electrodes forming a capacitor on a substrate in which one of the electrodes is a back electrode forming perforations therein corresponding to acoustic  
5 holes and the other of the electrodes is a diaphragm, characterized in that the diaphragm is mounted on the substrate while the back electrode is mounted in a position opposed to the diaphragm across a void to be supported by the substrate, the back electrode being formed  
10 by polycrystal silicon of 5 $\mu$ m to 20 $\mu$ m in thickness.

[2] A sound detecting mechanism as claimed in Claim 1 characterized in that the substrate comprises a support substrate having a monocrystal silicon substrate acting as the base thereof, and  
15 that a silicon substrate of (100) orientation is used as the monocrystal silicon substrate.

[3] A sound detecting mechanism as claimed in Claim 1 characterized in that impurity diffusion treatment is executed on the  
20 diaphragm.

[4] A sound detecting mechanism as claimed in Claim 1 characterized in that the substrate comprises a support substrate having a monocrystal silicon substrate acting as the base thereof, and  
25 that the support substrate consists of an SOI wafer.

[5] A sound detecting mechanism as claimed in Claim 4 characterized in that the SOI wafer has an active layer used as the diaphragm.  
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[6] A sound detecting mechanism as claimed in Claim 4

characterized in that the diaphragm is formed of monocrystal silicon of 0.5 $\mu$ m to 5 $\mu$ m in thickness.

5 [7] A sound detecting mechanism as claimed in Claim 1  
characterized in that the substrate consists of an SOI structure wafer including a silicon oxide film or a silicon nitride film formed on a monocrystal silicon substrate and a polycrystal silicon film formed on the silicon oxide film or the silicon nitride film.

10 [8] A sound detecting mechanism as claimed in Claim 7  
characterized in that the polycrystal silicon film formed on the SOI structure wafer is used as the diaphragm.

15 [9] A sound detecting mechanism as claimed in Claim 7  
characterized in that the diaphragm is formed of polycrystal silicon of 0.5 $\mu$ m to 5 $\mu$ m in thickness.